Minnesota Department of Agriculture

FY 2006 Specialty Crop Block Grant Program Final Report

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Contacts

Fang (Lisa) Wu, Planner Senior
Agricultural Marketing Services
Phone: (651)-201-6089
Email: Fang.Wu@state.mn.us

Kurt Markham, Director
Agricultural Marketing Service
Phone: (651)-201-6382
Email: Kurt.Markham@state.mn.us

Summary

Minnesota Department of Agriculture (MDA) received $113,274.97 from the USDA's FY 2006 Specialty Crop Block Grant program. With this grant, three projects undertaken by the State and by the sub-grantees have increased the competitiveness of specialty crops in the market through increased awareness, knowledge and consumption of Minnesota specialty crops by the consumer, and have increased knowledge and sales to the producer through education, research and marketing promotion activities.

Issues

Though Minnesota is a leading agricultural production state in the U.S., its productivity and market of the specialty crops industry has been relatively limited. In 2007, the value of specialty crops production[1] is about $538 million which is only 4% of total value of agricultural products sold in Minnesota. The major specialty crops in Minnesota are dry edible beans and potatoes and vegetables grown locally. To enhance the competitiveness of this industry, educational outreach program, marketing campaign, and breeding researches are in great need. However, the specialty crop organizations have had limited

[1] Source: 2007 Census of Agriculture, specialty crops including following categories: vegetables, melons, potatoes and sweet potatoes; fruits, tree nuts, and berries; nursery, greenhouse, floriculture, and sod; cut Christmas trees and short rotation woody crops.

funding to provide technical and marketing knowledge to their members and to increase their market value and consumer awareness. Therefore, each project conducted with Specialty Crop Block Grant funds has helped increase the value of both produce and plants through promotional and educational activities.

Project A: Northern Plains Potato Growers Association

Outline of the Issue/Need for Project
The purpose of this project has been to better position the potato industry in Minnesota and North Dakota to maximize profits for the potato growers through an aggressive breeding program, producer education program, marketing and promotional initiatives, and improving the financial position of our process growers through improved negotiated agreements.

Projects undertaken to address the issue

Project 1: Expand the number of varieties released from the breeding programs.

Project 2: Maintain the strength of the advertising campaign for products and upgrading of the marketing program equipment.

Project 3: Provide training for negotiator training teams.

Project 1. Expand the number of varieties released from the breeding programs.

Project Goals Achieved

- Expanded the number of varieties released from potato breeding programs in cooperation with North Dakota State University and University of Minnesota. One variety that was produced at North Dakota State University was pulled into the process system in the fall of 2008.
- Work is underway with a local processor to run a processing trial and finished product quality tests in conjunction with a major Quick Service Restaurant (QSR). Market acceptance and market demand is anticipated with release of this variety.
- In the effort to improve seed quality in the released varieties, a better system has been developed to improve seed quality in the released varieties. This system has allowed virus levels to be reduced to a point where they are at levels eligible for recertification and can be produced by seed growers. This eliminates that part of the risk assumed by this group of producers and will provide a more rapid increase in volume of disease free seed.

Five entries from the NDSU program were evaluated in the North Central Regional Potato Variety Trial (NCRPVT) including, bright red skinned selections suitable for the fresh market, AND00272-1R and ATND98459-1RY; the latter has yellow flesh. AOND95292-3Russ, a dual-purpose russet suitable for tablestock and frozen processing was included in the russet/long white trial. ND8304-2 and ND8307C-3 were entries in the NCPRVT chip trial.

Promising advanced selections include red tablestock selections ND4659-5R, ND8555-8R, and ND6002-1R. Dual-purpose russet selections, AOND95249-1Russ, ND8229-3, ND8068-5Russ and AOND95292-3Russ possess excellent processing quality and appearance, in addition to the need for reduced inputs. Several cold chipping selections continue to look promising, including ND5775-3, ND7519-1, ND8304-2, and ND8305-1. Tissue culture plantlets of ND6002-1R were deposited with the North Dakota State Seed Department for multiplication for producer and industry evaluation.

Information for plant variety protection and cultivar release was collected for this variety, with anticipation of release consideration in 2009. We have discovered that AOND95249-1RUSS is frying up darker than anticipated according to the processor and Quick Service Restaurant. Release will be dependent on further testing.

Results, Conclusions, and Lessons learned
Breeders now have several varieties which need to be increased to improve seed availability as well as develop cultural practices to improve their productive capabilities. Current breeders have several varieties that would work in the process / frozen industry and need to be produced and processed to prove their characteristics work in today's competitive market.

Project 2: Maintain the strength of the advertising campaign for products and upgrading of the marketing program equipment.

Project Goals Achieved

- Doubled the advertising expenditures and therefore the resulting coverage and infiltration to the target markets.
- Placed strategically integrated advertisements into sectional editorials of produce publications with editorial covering this region.
- Improved and upgraded marketing program equipment. The new food show equipment and booth design have improved direct interaction with buyers at food show events.
- The Association attended and displayed at the National Restaurant Association show in Chicago. This show was a huge success as potato dish samples were provided to nearly 3,000 show participants at a pace of 80 samples per hour.
- Weekly conference calls among fresh potato shippers have created an avenue of trust and cooperation, eliminating price undercutting, resulting in higher prices for producers.

Other exhibits included:

July 2008: Exhibit at North Dakota State Fair, Bismarck, ND

August, 2008: Exhibit at Russ Davis Food Show, Wadena, MN
Exhibit at Northern Plains Potato Growers Field Day, Tappen, ND
Exhibit at Northern Plains Potato Growers Field Day, Hoople, ND

October 2008: Exhibit at Produce Marketing Association Convention, Anaheim, CA

January 2009: Exhibit at North Dakota Grocers Association, Fargo, ND

February 2009: Exhibit at International Crop Expo, Grand Forks, ND
Exhibit at Upper Midwest Food and Hospitality Show, Minneapolis, MN

March 2009: Exhibit at Ag Day, Bismarck, ND
Exhibit at North Dakota Winter Shows, Valley City, ND

May 2009: Exhibit at National Restaurant Show, Chicago, IL

The video and web stream have not been completed to date. This is a project that will require more time to film the video portion and the resulting web streaming opportunities.

Results, Conclusions, and Lessons learned
Through the use of this grant The Northern Plains Potato Growers Association has more than doubled its advertising expenditures and therefore the resulting coverage and infiltration to its target markets. The advertising campaign is also matched by member shippers on a pay to participate basis. Alongside the ads, shippers ran their own proprietary advertisements improving saturation and effectiveness. Strategically integrated advertisements were placed into sectional editorials of produce publications with editorial covering this region. The publications included Produce Business Magazine, The Produce News newspaper, and The Packer newspaper. The equipment portion of this grant has made significant improvements. Along with improving communication, computer upgrades have allowed greater capabilities to do more in-house creation and design. The new food show equipment and booth design have improved the curb appeal as well as buyer interaction at these events. Improvements in the conferencing services have paid dividends to producers in increased farm revenues.

Project 3. Providing training for negotiator training teams.

Project Goals Achieved
- Training was provided for negotiation team members. Fifteen members of the negotiating teams received training.
- During 2008, the Association created another bargaining cooperative for the fresh potato industry. This fledgling company has over 50% participation in its first quarter of existence. The group has also linked itself to a new national organization called United Potato Growers of America, which utilizes the same communication practices and principles as we have developed

Results, Conclusions, and Lessons learned
As a result of the strategic planning sessions, contracts were successfully negotiated realizing the largest single year contract price increases of any region in the US and Canada.
Producers for each fry plant in ND will receive an increase in contract value of over $1 per hundredweight, an increase of over 20% on some farm operations.

Long Term Outcome Measures from these projects
Contracts were entered into with North Dakota State University and the University of Minnesota to support a new extension agronomist for potatoes, resulting in an immediate positive impact as well as a long-term impact.

As a result of the new bargaining cooperative formed, the organization can analyze inventory, demand and shipments and create a relationship to price of the product. Movement and shipments can now be predicted to avoid negative pricing situations. This addition to the industry has and will continue to positively impact pricing and market confidence through an improved level of awareness of market dynamics.

As a result of this research effort, breeders have enough material to make 2 or 3 releases in each of the next 4- 5 years.

In an effort to streamline bargaining and other activities in the Midwest potato states, the Association is committed to working together for joint benefit and cost savings wherever possible.

The projects conducted with the assistance of the United States Department of Agriculture Specialty Crop Program have helped the continued forward movement in varietal development, initiated positive direction in improving cultural practices and have improved market prices for both the fresh and process potato segments within our industry.

Contact
Chuck Gunnerson, Interim President
Northern Plains Potato Growers Association
P.O. Box 301
420 Business Highway 2
East Grand Forks, MN 56721
218 773-3633

Project B: Northarvest Bean Growers Association

Outline of the Issue/Need for Projects
The dry bean industry has only recently begun to organize efforts leading to scientifically credible health claims. No mechanism existed to summarize existing scientific literature, and coordinate/focus newly funded investigations into the most important components of dry beans of greatest importance to consumers.

Projects Undertaken to Address the Issue

Project 1: Commission Scientific Literature Review

Project 2: Develop a sustainable organizational strategy for Northarvest to advance a program of scientific investigation

Project 3: Host a conference of scientists, policymakers, nutritionists to formulate research priorities

Project 4: Provide a forum for the exchange of scientific information and priorities between/among Northarvest, and other members of the supply chain

Project 5: Form a Scientific Advisory Committee for decision-making on funding of research priorities

Project 1. Commission Scientific Literature Reviews

Project Goals Achieved
A comprehensive review of the literature on dry beans and human health was commissioned to Dr. Maurice Bennink and Ms. Elizabeth Rondini of the Food Science and Human Nutrition Department of Michigan State University at East Lansing, Michigan. Their report, some 46 pages in length, and entitled "Beans and Health: A Comprehensive Review," was received in final form in February, 2008.

Results, Conclusions, and Lessons Learned
The literature on beans and human health suggested that the areas of a) diabetes/obesity, b) heart health, and c) cancer had been the subjects of most attention by the scientific communities. Across these areas, many studies were suggestive of favorable health benefits to humans accruing from the consumption of dry beans. The current status of the literature however, did not support an application for an unqualified health claim. However, the literature review enabled collaborators and conference members (below) to focus discussions and narrow discussions to areas of highest probability of "bearing fruit" in subsequent studies.

Project 2. Develop a sustainable organizational strategy for Northarvest to advance a program of scientific investigation

Project Goals Achieved
A review of literature was undertaken by Dr. William Lesch, Department of Marketing at the University of North Dakota, Grand Forks, North Dakota, investigating the rationale, methods of operation, and recommendation for procedures to be followed by Northarvest in initiating its scientific program and advisory council. His report entitled "A Research Strategy and Procedures for the Scientific Health Advisory Committee of the Northarvest Bean Growers Association," (14 pp) and accompanying suggestions for "Committee Bylaws" (4 pp), were received in January, 2008, and December, 2007, respectively.

Results, Conclusions, and Lessons Learned
It is difficult for small, specialty vegetable organizations to adequately fund meaningful and sustainable programs involving human clinical research. However, by utilizing seed monies as incentives, at least one other organization has been very successful in leveraging and aligning federal funds (NIH) in support of organizational goals. Adopting the model already utilized by the U. S. Soybean Board, Northarvest may expect to attract scientists into its program of study and broaden the available scientific literature on beans and health without being the primary financier. The recommendations were adopted by Northarvest and the program was initiated.

Projects 3 and 4. **Host a conference of scientists, policymakers, nutritionists to formulate research priorities**
Provide a forum for the exchange of scientific information and priorities between/among Northarvest, and other members of the supply chain

Project Goals Achieved
Dr. Jerry Combs, Director of the USDA Grand Forks Human Nutrition Research Center, organized and convened a day-long conference of scientists, nutritionists, policymakers and advisors with the intention of developing a strategy to guide research investments made by Northarvest and to focus future requests for proposals in the respective scientific disciplines. This was held at the Center on May 29, 2008, and included invited members from the United States and Canada affiliated with Universities, Centers, and the Food and Drug Administration. The resulting report of the Conference entitled "Beans and Health Workshop" identified issues associated with market acceptance of beans, regulatory hurdles, the status of Canadian research efforts, and establishment of a credible scientific foundation for both consumer acceptance and regulatory satisfaction. A statement on the status of research into the links between the use of beans and cardiovascular disease, the use of beans and the prevention of certain types of cancer, the use of beans and weight management/obesity, and the use of beans and general nutrition/health was produced, along with general recommendations for research priorities. Research priorities recommended by the group included the areas of cardiovascular health, weight management/prevention of obesity, and colon health. These areas of benefits were specifically tied to elemental components of beans.

The first gathering of the scientific advisory committee to set our research agenda was face to face. That meeting took place at the GFHNC May 29th 2008.

The second advisory committee (6 members, we now call them a peer review panel and they were chosen by Communiqué who runs our DBHRP) was established to evaluate and score the 34 submitted research projects. They did not need to meet face to face because each panel member was assigned to only review submitted proposals relative to their field of expertise and submit back to Communiqué their independent scored evaluation.

This process is one the United Soybean Board established 8 years ago under the guidance of Communiqué. After we learned about the Soybean success and how they got to where they are, we followed in their footsteps.

Results, Conclusions, and Lessons Learned

The conference served to underscore several important conclusions and lessons. First, the rather "scattered" nature of research into dry beans and health can benefit from one or more organizations investing in carefully identified priorities, i.e., not all areas of opportunity are likely to yield equal (or desirable) outcomes. Secondly, and resulting from the interaction among constituents with different goals and domains of interest, all participants gained by seeing the "whole" of the processes leading up to successful (or, unsuccessful) health claim applications, and took away improved understanding of the process overall. Thirdly, the results of this conference lead directly to priorities for funding to be used by Northarvest in implementing its strategy to achieve a broader and stronger research foundation on beans and human health. A copy of the report on the conference is attached as Appendix A.

Project 5. Form a Scientific Advisory Committee for decision-making on funding of research priorities

Following the success of the conference on dry beans and human health, a subset of scientists (chosen only in part from Conference attendees) was formed to comprise the Advisory Committee. This specific Committee was charged with evaluating pilot proposals according to the terms of a program on Dry Beans and Human Health, an outcome/recommendation of the report by Dr. Lesch (above).

Project Goals Achieved

The Committee was formed and comprised of experts in the range of areas of interest identified as priorities for research investigation. This panel, including Dr. Jerry Combs USDA-Grand Forks, ND), Dr. Ross Welch (USDA-Ithaca, NY), Dr. Nikil Dhurandhar (Louisiana State University, Baton Rouge, LA), Dr. Kalidas Shetty (university of Massachusetts, Amherst, MA), Dr. Joanne Slavin (University of Minnesota, Minneapolis, MN), and Dr. Penny Kris-Etherton (Penn State, University Par, PA), reviewed/screened/ranked some 34 final pilot proposals according to the application of some nine criteria, and made recommendations for the support of ten (10) proposals. This resulted from some nearly 150 researcher inquiries into the Northarvest program.

Results, Conclusions, and Lessons Learned
The management of a large scale research program such as has been undertaken here, requires considerable planning, the inclusion of qualified partners, and considerable long-range planning if it is to be effective. Such programs can be successful, as was the case here, with the assistance of experienced managers. The current strategy, now fully implemented, has proven successful in attracting qualified researchers into the conduct of research into dry beans and human health.

Long-Term Outcome Measures
Northarvest has only recently concluded its first round of funding, resulting in ten (10) approved proposals. Owing to circumstances beyond the control of Northarvest, two otherwise successful applicants withdrew from further pursuit of their projects. The remainders either have, or are expected shortly to have completed submissions to NIH R01 programs for human research.

Northarvest will track (through its consultant Communiqué) the progress of these researchers in the competitive review process. Outcomes expected of this program will include some portion of funded proposals, the initiation of research programs, and the production of peer-reviewed articles useful to the support of health claims at the level of the Food and Drug Administration.

Northarvest expects at this time to continue the program indefinitely.

Northarvest extends its deepest appreciation to the Commissioners and staff of the North Dakota and Minnesota Departments of Agriculture, and the United Stated Department of Agriculture for their efforts to advance this and related programs.

Attachments
See Appendix A entitle "Results of recent symposia on Dry Beans and Health" dated July 10, 2008.

Contact
Mr. Timothy Courneya
Executive vice President
Northarvest Bean Growers Association
50072 East Lake Road
Frazee, MN 56544
(218) 334-4569
nhbean@loretel.net

Project C: Minnesota Grown Program
Goals:
To assist Minnesota specialty crop producers by enhancing the Minnesota Grown Program through improved marketing materials, more fully integrating the program spokesperson, by increasing the reach and effectiveness of the Minnesota Grown Directory, and by increasing consumer awareness of and use of the gardenminnesota.com website.

Outcomes Achieved

Expected Outcome #1: Increase the number of Minnesota Grown Directories by at least 5,000 copies.

- *The number of Minnesota Grown Directories printed increased from 175,000 in 2007 to 185,000 in 2008. It increased again in 2009 to 190,000 copies.*

Expected Outcome #2: Develop at least 3 new point-of-sale items for use by specialty crop producers. This will include at least one item for floriculture or nursery crops and at least two items for use by other specialty crops such as fruits and vegetables.

- *Two new point-of-sale materials have been created, a new Minnesota Grown sticker with room for growers to write the product price on the sticker and a custom Minnesota Grown twist tie that also has room for the grower to write a price or other information.*

Expected Outcome #3: Increase traffic to the www.minnesotagrown.com website by advertising with Google or Yahoo and by improving the appearance and functionality of the on-line edition of the Minnesota Grown Directory[2]

- *This has been an amazing success story. The MGPG created a pay-per-click advertising campaign[3] with Google and with Yahoo. From September 2007 when the pay-per-click campaign began through December 2008, this campaign resulted in over 205,000 clickthroughs to www.minnesotagrown.com This campaign has resulted in annual totals of unique visitors increasing by more than 7-fold from 2006 to 2008! Google accounts for over 90% of these clicks (over 192,500 out of 205,000 total clicks).*
- *The MGPG contracted with a web design/programming company to create an improved minnesotagrown.com website. The new web site was launched to the public on April 30, 2009. Some minor bugs will likely be found and fixed over the next couple of months but initial feedback has been extremely positive.*
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Expected Outcome #4: Develop custom photography of spokesperson Carrie Tollefson and print new marketing materials using the photos.

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[2] The original application specifies improvements to the on-line edition of the Directory. The online Directory can be found at www.minnesotagrown.com

[3] For more details about the "pay-per-click" campaign, please see attached *MDA Marketing Minute* released on October 17, 2007.

- *Photos of Minnesota Olympian and Minnesota Grown spokesperson Carrie Tollefson were featured on the cover of the 2008-09 Minnesota Grown Directory and the 2009-2010 Directory. Her photo is also featured on a special web page on the minnesotagrown.com website. We have had preliminary discussions with organizations regarding the possible involvement of Carrie Tollefson in a Farm to School promotion designed to increase sales of local foods to school districts. This would require additional custom photography or custom videos of Carrie.*

Expected Outcome #5: Promote the GardenMinnesota.com[4] website through a television ad campaign during 2008.

- *Television station KSTP was selected to air the new GardenMinnesota.com television ads featuring Carrie Tollefson. The ads ran during the month of May, 2008. The total cost of the campaign was $21,350.*

Expected Outcome #6: Increase consumer use of the on-line Minnesota Grown Directory by at least 20% compared to the previous year.

- *These funds have allowed us to already surpass this goal. The number of unique visitors using the online Directory increased from just over 18,500 in 2006 to over 54,000 in 2007 (nearly 3x as many unique visitors). The total number of unique visitors increased to nearly 138,000 in 2008 (more than double the 2007 total). The number of unique visitors in the first four months of 2009 is nearly 30% higher than the same four months in 2008.*

Lessons Learned

The "pay-per-click" campaign greatly boosted the visitors using the online Directory. We will continue to utilize this method to drive traffic to the website. Also it greatly benefited producers with a website as consumers can go directly from their Minnesota Grown Directory ad to the producer's website. For more information, please see Appendix B.

[4] GardenMinnesota.com is a website hosted by the Minnesota Nursery and Landscape Association. The Minnesota Grown Program works with the MNLA to promote this website. The website promotes Minnesota nurseries and garden centers and also links back to the online Minnesota Grown Directory at www.minnesotagrown.com

Appendix A

Results of Recent Symposia on Dry Beans & Health

A Report to the

Board of Directors

of the

Northarvest Bean Growers

Association

Frazee, MN

William C. Lesch, PhD
Professor
Department of Marketing
University of North Dakota
Grand Forks, ND

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ACKNOWLEDGEMENTS

This project was underwritten by a *USDA Specialty Crop Block Grant* administered jointly by the states of North Dakota and Minnesota. Thanks to Ms. Lisa Fang, and Mssrs. Kurt Markham and Chuck Fleming for their assistance. Additional funding pro□ vided by the Northarvest Bean Growers Association. Project approvals and oversight were provided by the Northarvest Promotion Committee and Executive Vice President Tim Courneya.

This report was produced by Ms. Corrine Iverson, Staff Associate in the Marketing Department at the
University of North Dakota, Grand Forks.

The warm and capable scientists and support staff of the Grand Forks Human Nutrition Research Center contracted with Northarvestto host the Beans for Health Workshop on May 28, 29, and 30,2008, results of which inform a major portion of this report. Participants contributing to the three□day event included:

Dr. Jerry Combs, Director, Grand Forks Human Nutrition Research Center (organizer)
Dr. Tom Badger, Director, Arkansas Children's Nutrition Center

Dr.

Maurice Bennink, Dept. of Food Science and Human Nutrition, Michigan State Univ.

Dr. Jay Cao, GFHNRC

Dr. Jerry Combs, Center Director, GFHNRC

Mr. Tim Courneya, Director, NBGA

Dr. Julianne Curran, Pulse Canada Health Program

Dr. Kathy Ellwood, CFSAN, FDA

Dr. Clifford Hall, Department of

Cereal and Food Science, NDSU

Ms. Bonnie Hoverson,

dietitian, GFHNRC

Dr. Janet Hunt, GFHNRC

Dr. Bill Lesch, Department of Marketing, UND

Dr. Len Marquart, Department of Nutrition and Food Science, University of Minnesota

Ms. Angie Scheet, dietitian, GFHNRC

Mr. Steve Veile, Communiqué, Inc.

Dr. Gary Weaver, gastroenterologist, Maine

Dr. Ross Welch, USDA, Ithaca, NY

Dr. Lin Yan, GFHNRC

Thanks to all for their time, advice, and other contributions to a successful meeting.
Grand Forks,

North Dakota July 10, 2008

EXECUTIVE SUMMARY

More than one-third (36%) of shoppers said their desire to reduce the risk of developing health conditions had a lot of influence on their food-purchasing decisions...[1]

The food industry is amidst a revolution—a *health* revolution—marked in part by the reformulation and repositioning of foods, with strong orientations to human health benefits. The *Grocery Manufacturers Association of America* has estimated that more than 10,000 products

have been introduced in the last five (5) years that included nutritional improvements.[2] Monitoring and responding to these changes, the Northarvest Bean Growers Association recently attended the CICILS/PTIC *Pulse health and Nutrition Symposium* held in May, in Puerto Vallarta, Mexico[3], and conducted the *Beans and Health Workshop* in Grand Forks, North Dakota, to prepare a responsive organizational strategy.

This report details the presentations and findings from those conferences. In summary, these include the following.

- World wide, the pulse industry has come to realize the health benefits of pulses generally, and dry beans in particular. Several national trade organizations/foreign governments/private firms around the world have organized programs trumpeting the health benefits of beans and pulses.
- The industry has come to realize the need for credible human health research as a prerequisite to successful health communication and product positioning. This is a regulatory requirement, and consumers are ever more interested and receptive to its value.
- Existing research on dry beans is inadequate to support the FDA's most stringent form of health claim, one based upon *significant scientific agreement.* Current and planned research may enable this, and other forms of marketing communication that consumers find valuable.
- Future human research contemplated by Northarvest should focus upon cardiovascular health as a first priority, potentially unraveling the links between fiber, resistant starches and/or other dry bean attributes, and cholesterol reduction.
- Current/additional research on the relationship between beans and glycemic index seems warranted owing to the well established relationship between consumption of beans and blood glucose levels.
- The soy industry has, by analogy, provided a logical and promising strategy to leverage public funds in support of the Northarvest agenda for human health research.
- Opportunities to partner with Pulse Canada on a common human health research agenda are worthy of exploration and discussions are underway to identify the bases for the same.

1 Elizabeth Sloan, *Top 10 Food Trends,* Food Technology, April 2007, p. 35.
[2]Alex McNally, *Industry is Taking Healthy Eating Seriously, Poll Finds,* at www.nutraingredients usa.com/news/print/ NewsBis.asp?id=82626 accessed may 23, 2008.
3 Dr. William Lesch, author of this report, attended the day-long event on pulses and health.

OVERVIEW OF THE CONFERENCE

The Pulse Health and Nutrition Symposium held in Puerto Vallarta, Mexico, May 20, 2008, was a first ever event by the international organization to focus on the health aspects of pulses. The conference was primarily organized by Mr. Gordon Bacon, Chair, Science and Nutrition Committee of IPTIC, and the CEO of Pulse Canada. The day□long activities were held at the Sheraton Buganvilias Resort and Convention Center at the beginning of the annual conference schedule.

The Agenda can be found in Appendix A (attached) and included a keynote address by health communications expert Mr. Bill Layden (FoodMinds), and an overview by Dr. Enrique Jacoby (Pan American Health Organization). A morning research panel focused upon the role of pulses in the prevention and treatment of diabetes and obesity, the role of beans in the prevention of cancer, and the contributions of pulses to cardio□ vascular health/disease control. The afternoon presentations included topics on public campaigns involving health aspects of pulses in Australia and Mexico, an academic study of the economic value of health at□ tributes, and the advertising campaign strategies recently advanced by the Bush Brothers company of the United States. Each is described in turn. The original presentation slides can be accessed at http://www.cicilsiptic.org/members/stat/2 2008.htm.

KEYNOTE PRESENTATION & ENVIRONMENTAL REVIEW
THE TIME IS NOW FOR PULSES: HARNESSING KEY SYSTEMS DRIVERS AROUND THE GLOBE TO INCREASE DEMAND AND SALES OF PULSES

Mr. Bill Layden has many years of experience as a consultant to the food industry, including well□known industry names as Kraft, Proctor and Gamble, and others, along with commodity organizations such as the National Cattlemen's Beef Association and the Almond Board of California, the latter of which he assisted in the development of its seminal health positioning strategies. His theme: the time is now for pulses.

Drawing from recent statistical data on consumption of tree nuts, Mr. Layden underscored the successes of the Almond Board in increasing demand and prices for almonds following promotional efforts surrounding the health attributes of the commodity.

The dietary context facing all food producers today was then characterized: consumers can be categorized as 'overfed,' 'underfed,' or 'misfed.' There have been strong increases in the number of persons incurring obesity, or who can be attributed as overweight, circumstances that apply in both adult and child□aged populations, and common in industrial countries of the world. This is at least in part attributable to a 'Western diet' high in carbohydrates and fats, and low in fiber. Hunger continues to be a problem in large number: perhaps 15+% of the world can be defined as undernourished or malnourished. These conditions favor the use of pulses as cost□effective, healthy solutions.

Consumers, particularly those in industrialized countries, have increasingly demanded 'healthy' foods. Mr. Layden introduced a range of survey data in support of 'healthiness' of foods as a consideration by consumers, and the growth in new product introductions referencing healthy attributes. Other consumer factors in market success

include the impact of production on the environment and the authenticity of source. Members of the supply chain for pulses, he argued, owing to the manner of pulse production, high levels of pulse health factors, and under promotion, should capitalize on this conflux of factors to reverse the now declining trend in demand for their products.

He recommended that the industry "take a page from the almond playbook," and develop an industry wide strategy for the pro motion of pulses, and suggested a range of factors that would be important to success.

Key Points? The market environment for pulses has at perhaps no other time been predisposed to be more receptive to messages about the health qualities of pulses. While the factors contributing to this differ between developed and under developed countries, the outcome is the same and favors promotion of the category. The industry could benefit in a manner akin to that of almond growers and others, but success will require a new organizational structure and thinking.

SESSION PRESENTATIONS

HEALTH ISSUES: A GLOBAL PERSPECTIVE

Dr. Enrique Jacoby is a medical doctor with a master's degree in public health employed as the Regional Advisor on Nutrition a the Chronic Disease Unit of the Pan American Health Organization. In that capacity he has worked with Ministries of Health among the countries of Chile, Brazil, Mexico, Ecuador, Bolivia, Columbia, Cuba, Costa Rica and Argentina. With more than 20 years experience in the arena of public health, Dr. Jacoby is well qualified to discuss the gaps in understanding the role of diet and lifestyle with public health. The focus of his address was on changes in diet favoring "poor nutrient densities" (including fast foods, processed foods, refined cereals, red meat and milk), and their contributions to chronic disease.

The rise in chronic disease as a source of world mortality is a marker of our times. Cardiovascular disease was recently reported by WHO as the leading cause of death, worldwide, a trend that shows no signs of abating; some 2/3rds of mortality can be linked to diet and physical activity.

As populations improve economically, they appear to reduce the actual quality of food intake as measured by nutrient density. "Cheap" foods are also among the least dense with respect to nutritional values (oils, butter, sugar, desserts; com pared with fish shellfish, vegetables, fruits). Quantity, not quality, has become the 'cornerstone of the (contemporary) food system.' Some four (4) crops account for more than 3/4 of the calories consumed by U.S. consumers: corn, soy, wheat and rice. As a result, nutrient availability to humans is in de cline. This has been facilitated by lifestyles favoring lesser time for home food preparation (averaging only 24 minutes per meal in 2005; down from 45 minutes in 1960), and dilution of the value by society for the rituals and societal engagement surrounding the context of the meal.

Nonetheless, some indications are that these trends may be reversing, including greater respect for customer needs, stronger roles among public health actors, and appreciation of the health values of good dietary practice.

Key Points? The world's diet is becoming less healthy and this is being reflected in increased rates of mortality from chronic disease. Populations are coming to realize

this, and there is growing appreciation for the contributions to health that can be made by improved diet and lifestyle. “Look at your food basket. If your grandmother wouldn’t recognize the food you see (as food), you probably shouldn’t eat it.”

THE ROLE OF PULSES IN THE PREVENTION AND

Dr. Este (HH) Vorster earned the Doctorate in physiology in 1987 and is currently Director of the Africa unit for Trans□disciplinary Health Research at the North-West University, South Africa. She has many years experience as a public health expert, including the Presidency of the Nutrition Society of South Africa (twice), and as invited expert and chair of various WHO/FAO panels. The rise in diabetes and obesity is alarming, affecting those in both developed and underdeveloped countries, perhaps in greater proportion those of the latter. Strong evidence exists to suggest that pulses may be part of the solution to this epidemic caused by poor nutrition.

Developing countries suffer from the problem of both under□ and over□nutrition while the developed world is experiencing high rates of growth in obesity and type□2 diabetes. There is evidence that these adverse health conditions are linked with ethnicity in both settings

(developed/under□developed), in□ creased rates of urbanization, and aging. The incidence of obesity among children has been well□documented in the United States as well as world□wide, and differences exist among adult men and women.

A matrix of factors are to blame for the increased incidence of diabetes and obesity (societal, behavioral, biological) and their associated causes of mortality (cancer, cardiovascular disease, other). It is important to recognize the system of factors and how they interact, and develop solutions that span multiple generations, realizing that the goals of food security, safety, affordability, and health are impacted by a range of cultural, individual/household/community factors.

Pulses, foods high in favorable carbohydrates and protein, low in fat, and good sources of trace minerals and other important nutrients, can play a vitally important role in alleviating the ills of current food patterns. Evidence is mounting to suggest that their use increases feelings of satiety, lowers blood glucose, improves nutritional status, lowers cholesterol and improves gut health perhaps lowering the incidence of certain cancers. Thus, pulses are ideally located to address both over□nutrition and under□nutrition.

Key Points? Both underdeveloped and advanced societies require good nutrition if we are to improve health and quality of life. The incidence of obesity and diabetes is increasing in both settings and pulses can make important contributions to the reduction of ills associated with under□nutrition as well as over□nutrition in these contexts.

RECENT FINDINGS ON THE ROLE OF BEANS IN CANCER TREATMENT AND PREVENTION

Dr. Terry Hartman is a nutrition epidemiologist at the Pennsylvania State University. Dr. Hartman earned the PhD at the University of Minnesota and completed a Master’s Degree in Public Health at the Harvard School of Public Health, and then went on to post□doctoral work at the US National Cancer Institute. The last ten years of her career have included the investigation of the role of diet in the incidence of breast, prostate and colorectal cancers. Attributes of beans—including fiber—may play important roles in the reduction of incidence of a variety of cancers.

Cancer arises from a number of causal factors and often takes a decade or more to reveal itself. Potential anti□carcinogenic components in dry beans include a range of phytochemicals, starch, and dietary fiber. In addition, diets high in beans may, as a result, be lower in other potentially harmful substances, contribute to satiety, and are also sources of other important nutrients.

Existing research on the linkages between pulses and cancer suffer from a number of limitations, including the lack of randomized trials, the use of dissimilar definitions of variables under investigations, a lack of validity in questionnaires, and the lack of underlying variance in usage of beans among western cultures. Some studies do suggest reduced incidences of certain cancers in light of use of beans and other legumes. Early indications are that prostate□ and stomach cancer are included. Data on colon cancer incidences are not conclusive, and are the subject of an ongoing study in which she is currently participating as a lead investigator. This is a controlled feeding study which is designed to increase validity of conclusions. Both insulin resistance and adenomas, as well as a number of other endpoints are being studied (cholesterol levels, bacterial profiles, satiety). A model has been developed outlining the role of dry bean attributes in the metabolic processes associated with the endpoints referenced (above).

Key Points? Indications are that dry bean use is correlated with the reduction of factors known to contribute to the generation of certain types of cancer. This series of controlled feeding studies is intended to contribute to scientific understanding of the metabolic processes underlying the control that may be exerted by dry bean attributes, on those processes. Outcomes from this study should be released later in 2008.

DIETARY PULSES AND IMPROVEMENTS IN BLOOD VESSEL FUNCTION IN CARDIOVASCULAR DISEASE

Dr. Carla Taylor is a Professor in the Department of Human Nutritional Sciences at the University of Manitoba, Canada. Upon receipt of the PhD in Nutritional Sciences at the University of Guelph (Canada), she undertook post□doctoral appointments at the University of Michigan and University of Washington□Seattle. Her current re□ search interests include investigating the links among obesity, diabetes and cardiovascular disease. This investigation focused upon understanding the “stiffness” that occurs in the vascular system as a result of atherosclerosis, and whether the consumption of pulses can be an effective counter□measure in reduction of this condition.

Cardiovascular disease is the leading cause of death in advanced countries, responsible for roughly one□third of annual mortality in the United States. It is increasing due to the growth in prevalence of obesity and diabetes, but the latter conditions can be countered through regular use of a) low glycemic index foods, b) fiber, and c) consumption of flavonoids. Unfortunately, few rigorous studies have utilized pulses as the source of these three factors.

Atherosclerosis is characterized in part by “hardening” of the arteries, i.e., they lose their elasticity with the deposition of plaque. It was hypothesized that the daily use of pulses would improve cardiovascular health by increasing the levels of certain hormones produced by adipose tissues. A study was designed and executed to test this hypothesis in which test subjects consumed a daily serving (1/2 cup) of beans, lentils, or

chickpeas. Dependent variables included blood vessel function, a variety of clinical assessments including blood samples.

This project is still underway with results expected late this year.

Key Points? The role of fiber, starches (affording the low glycemic index), and a variety of flavonoids in managing cardiovascular health continues to be studied by scientists, with recent attention to diets including pulses. This study of various pulses is intended to clarify the role of these compounds in managing the range of factors that result in atherosclerosis, and will contribute to our under□ standing of the importance of pulses as part of a healthy diet.

THE SIZZLE OF SCIENCE SELLS: MARKETING PULSES AS A VALUABLE PART OF THE AUSTRALIAN DIET

Dr. Christine Hawkins is Executive Chairperson of Go Grains Health and Nutrition Limited, an independent membership organization supporting the grain industry of Australia. Established in 2005, Go Grains includes members from across the supply chain of grains and grain products, and is focused upon promoting the health values of grains and pulses. Her presentation described the bases upon which grains and pulses are being re□positioned in the Australian market.

The goal of Go Grains is to "increase the value of the Australian grains industry by influencing decisions consumer make about the foods that they buy," an outcome enabled by the independent, informed, and credible positions advanced by the organization as it develops and delivers new information, processes and technologies of value to the industry. This is accomplished through the delivery of seven essential functions, including leadership, promotion, relationship building, advocacy, measurable accountability, market reconnaissance, and industry collaboration. Objectives of Go Grains include the establishment and maintenance of contemporary and effective health based positioning for grains that differentiate them from other foods. The organization does so by developing science□based communications, conducting consumer research studies, carrying out research and development, and facilitating industry activities.

Since consumers do not have clear and comprehensive under□ standing of the health benefits of grains, the challenge to the industry is apparent, and involves increasing consumption to "healthy" levels, achieving a 4+ servings daily outcome.

The Go Grains group is continuing its efforts domestically, and expressed considerable interest in international collaborations on human research.

Key Points? The Australian food market suffers from a lack of knowledge about the health aspects of grains, including pulses, and the Go Grains mission is to address this issue. The organization has arranged a program at many levels involving multiple partners with the intention of increasing daily consumption of these products to four (4) or more servings daily. The group is interested in partnering with others with similar interests to conduct mutually beneficial research.

MEXICO BEAN PROMOTION CAMPAIGN

Mr. Jose Luis Aguilar is the Director of Client Services at Slogan Publicidad, a communications firm in Mexico City, Mexico. His presentation addressed efforts undertaken by the office of the Secretary of Agriculture, Farming, Rural Development

Fish and Food of Mexico, to increase Mexican consumption of beans. In Spanish, the report is available at the website: http://www.cicilsiptic.org/members/stat/22008.htm.

MEASURING THE BENEFITS TO INDUSTRY OF HEALTH AND ENVIRONMENTATTRIBUTE MARKETING

Dr. Paul Thomassin is Associate Professor of Agricultural Economics at McGill University Montreal. He earned the PhD from the University of Hawaii in Agricultural and Resource Economics and has held Visiting Appointments at the Australian National University Australia, University of Hawaii, and University of Auckland New Zealand. His talk centered on identifying factors important to consumers' choice of food products, including factors of health and production.

Consumers can be expected to maximize the value of their purchases, and many food purchases require that they make trade offs. For example, consumers value safe food, but at what point will they be less willing to pay for that benefit, or to achieve absolute certainty of knowledge that every food choice is completely safe in all regards? In this study, the investigator used a survey approach to unravel the values associated with price, safety, health and environmental effects for tomatoes, milk and chicken. The sample included households from the island of Montreal (n=500), with a high rate of response (> 70%).

Findings from the study revealed that consumers were wiling to pay more—approximately $0.50 more per kilogram for a tomato produced under conditions with more favorable environmental production practices that also afforded fewer human health risks, but was also less attractive in the market. Moreover, when given a choice, consumers avoided genetically modified products, tended to favor health and products produced under "sound" production practices.

By analogy, the researcher reasoned that pulses, given their environmentally favorable production profile, their desirable food profile and comparatively low cost, could benefit from improved market positioning on those dimensions.

Key Points? Consumers decide what to buy based not only on price, but on a range of factors, increasingly to include perceived health benefits as well as how the product was produced. Pulses appear to have features of production (environmentally "easy on the land") and consumption ("healthy") that make them good candidates for promotion to consumers on those bases.

MOVING FORWARD

Ms. Sara Rose is Director of Strategic Business Development at Bush Brothers & Company, Knoxville, TN. She has been the elected President of the Beans for Health Alliance, and is a member of the Steering Committee of the Pulse Canada Innovation Project. Ms. Rose provided an overview of the domestic market focusing on the consumer, and efforts underway at Bush Brothers to re position beans around health qualities.

Bush Brothers' holds the nation's largest market share of canned beans and has recently been developing a comprehensive strategy for addressing the health component. Bush's goal is to increase bean consumption by leveraging health and nutrition messages based on what is already known about the healthy attributes, and what is under stood about consumer predispositions.

The focal market for Bush's will be main□stream American households with children, representing about one□ third of all American households. Bush Brothers & Company is of the opinion that current science will not sup□ port health claims, but there is otherwise much that is known about beans that can be used relative to health messaging that does not require regulatory review. Consumer research for example, indicates that the public does not necessarily position beans as belonging to the vegetable group, but most consumers also intend to eat more vegetables. Thus, Bush Brothers has developed the slogan "Beans. The 'Vegetable with More'" around which it is advancing its campaign. The "more" is predicated on high fiber and high protein aspects of beans, and the message is being placed in a national print campaign including health, food, lifestyle, and parenting magazines. The focus is upon first growing the bean category.

Moreover, a website has been developed to aid in home preparation of beans through greater awareness and availability of recipes. Bush has partnered with the leading recipe provider allrecipes.com to deliver some 1,000 bean recipes and associated nutritional information. This has been combined with contests and electronic press kits to generate local interest and greater involvement with the web site. And, Bush has commissioned scientific papers, held discussions with government and consumer opinion leaders as well as other industry members to promote the nutritional aspect of the category.

Key Points? Bush Brothers and Company is committed to the re□positioning of the bean category around the health benefits. It has recently launched a national campaign in support thereof, and is actively collaborating with others in the industry to promote the overall category. The next generations of bean users need a clear understanding of the healthy aspects of beans. Increasing awareness of beans as vegetables, and providing home recipes, is expected to increase use.

THE GRAND FORKS CONFERENCE: BEANS FOR HEALTH WORKSHOP

OVERVIEW OF THE CONFERENCE

Pursuant to the terms of the USDA Specialty Crop Block Grant Program, Northarvest partnered with the Grand Forks Human Nutrition Research Center to sponsor this conference on the topic of beans and human health. An agenda for the event can be found in Appendix B, attached.

Separately, Northarvest previously gathered scientists in 2003, also at the Center. That conference however, was not informed by the range of research documents now available to the field, especially those analyses commissioned by Pulse Canada.

This convocation involved a number of informational presentations including reviews of the elemental composition of beans, a review of consumer behavior and motivations, regulatory considerations in achieving an approved health claim, and a review of recent pulses□human health investigations underway by sponsor Pulse Canada. And, while the afternoon session also included an overview of the funding strategy utilized by the US Soybean Board, the bulk of the time was devoted to developing an understanding of priority areas of research into human health and beans.

These topics are each described on the following pages. A summary of the Workshop is presented. See Appendix C.

EDIBLE BEANS- A FUNCTIONAL FOOD AND SOURCE OF FUNCTIONAL INGREDIENTS

Clifford Hall III is affiliated with the Department of Cereal and Food Sciences at North Dakota State University, Fargo. Dr. Hall was co□author (with Mehmet Tulbek) of the report commissioned by Northarvest entitled Composition and Usage of Edible Beans – A Literature Review, received in

2007.

Dr. Hall's presentation outlined the dominant and minor fractional components of dry beans with an eye to those of consequence to human health. Protein, as well as carbohydrates (including fiber, starch, and sugars) make up the bulk of any dry bean, although there are some varietal variations. Lipids make up a very small portion of the bean, and it is this low fat content that is of considerable interest to dieticians. There is also considerable interest among food scientists for the fractions of polyphenols owing to their expected functional food values.

The literature does not thoroughly reflect efforts to under□ stand how these values may be changed as a result of the manner of preparation, although evidence exists to suggest that some do. And, the bioavailability of some fractions rep□ resented in content, may be limited.

Key Points? Dr. Hall also described efforts recently under□ way at North Dakota State University to utilize bean flours in the production of snack foods. These centered on the development of "corn curl" comparables using bean and flaxseed, with testing for texture, taste and other variables of consumer interest.

Dry beans vary in their composition, and questions concerning the bioavailability of some elements. Those issues relate to how the various components interact during digestion, as well as how they may be affected by the choice of preparation for use. Dry beans are a very healthful food by nature and present with many research possibilities.

Early indications are that a snack food can be developed from bean flour that has qualities similar to those currently in production but utilizing corn flour.

SELECT MARKETING CONSIDERATIONS IN FORMING A DRY-BEAN-HUMAN HEALTH RESEARCH AGENDA

Dr. Bill Lesch is Professor of Marketing at the University of North Dakota, and a frequent consultant with Northarvest on issues of consumer communication and marketing.

Dr. Lesch spoke of the flat□to□declining level of consumption for many classes of beans, and for the whole of the bean category. He presented data taken from a Bush Bothers national survey of 2005 pointing to declining use of beans as a main dish, as part of a main dish, as a side dish, and as part of a side dish. In general, beans are declining in use as an ingredient in home□prepared meals, more so than other ingredients.

Adults spend far less time preparing meals (down by one□half since 1960), spend more of their income at restaurants, eat fewer complete meals (grazing is on the increase), and the available forms of beans are not conducive to quick preparation/snacking as may be preferred by consumers. Youth do not appear to be as enthused about bean use, and a recent survey by Bush Brothers revealed that fewer than one□half of consumers attributed beans to belong to the vegetable category.

Since consumers seek healthy foods, beans continue to have qualities both sought and desired by today's consumers. Dr. Lesch presented results from a range of national studies underscoring consumers' strong, if not growing interest in linking diets with health, suggesting that more promotion of the healthy aspects of beans is needed. He concluded with reference to the need for research into human health in areas including beans' fiber, and starches as beneficial to the control of weight and diabetes, as well as cholesterol.

Key Points? While per capita consumption of beans continues to be problematic, consumers are receptive to health communications touting dietary benefits of foods. Beans are well positioned for such communications given their "healthy" compositional profiles, and with additional research on human health benefits, the platform for beans could be further strengthened, with the goal of increasing use.

EVIDENCE-BASED REVIEW SYSTEM FOR THE SCIENTIFIC EVALUATION OF HEALTH CLAIMS

Dr. Kathleen Ellwood is Director of the Nutrition Program Staff in the Office of Nutrition, Labeling and Dietary Supplements at the Centerfor Food Safety and Applied Nutrition (CFSAN), a division of the U.S. Food and Drug Administration (FDA). Dr. Ellwood addressed the FDA regulatory process surrounding application and consideration of health claims and health information used in food promotion and labeling.

Dr. Ellwood began by reviewing the bases for regulation of labeling and marketing communication, and referencing the Congressional standard for significant scientific agreement (SSA), otherwise known as an unqualified health claim. Owing to court challenges, the FDA also provides for qualified health claims and Dr. Ellwood pointed out that the process of review for both is the same; the level of scientific evidence is characterized along a continuum, with unqualified claims meeting the highest standards for evidence, and qualified health claims satisfying lower thresholds of certainty of support for a particular claim being advanced. She carefully reviewed the standards and process by which a claim is scrutinized by the Agency, including the nature of the evidence and the nature of the study design. The FDA has articulated which endpoints (outcomes) are considered relevant for the area of health interest (e.g., diabetes markers include blood glucose level, insulin resistance; colon/rectal cancer involves assessment of polyps). Only human studies can be considered, and studies using randomized subjects, control groups, appropriate statistical techniques and including subject compliance checks are given the most weight.

Dr. Ellwood described the process of review surrounding lycopene found in tomatoes to illustrate. She did the same with chromium picolinate and its relationship with type 2 diabetes, as well as green tea and the asserted link with reduction in breast cancer.

Key Points? Dr. Ellwood's review clarified the nature of labeling and promotional statements available to marketers. Consumers don't only rely on unqualified health claims in their decision making, and there is evidence that considerable confusion can be found among consumers about the content of a health claim, i.e., there is the possibility, no matter how undesirable, for miscomprehension.

Standards for designing studies were discussed and clarified. The process of review was exemplified using recent "case histories" with an eye for what to avoid. And, it was suggested that there may be information currently available useful in an application for a structure□function claim, and/or content disclosures, also of interest to consumers as they compare food ingredients for health aspects.

PULSES AND HEART DISEASE/DIABETES: RESEARCH GAP ANALYSIS FOR HEALTH CLAIM SUBSTANTIATION

Dr. Julianne Curran is Manager of Market Innovation for Pulse Canada, headquartered in Winnipeg. With a doctorate in Nutrition from the University of Manitoba, Dr. Curran has overseen much of the health□related research activities initiated by Pulse Canada. The bulk of Dr. Curran's presentation addressed recently commissioned reviews of literature spanning years of published research on beans and pulses. These reviews assisted Pulse Canada to establish their own agenda for human research involving beans and other pulses.

First, it must be noted that in the area of pulses and cardiovascular disease, that there are few studies in the published literature that would be given much consideration by the US regulatory authorities owing both to their small number, and design flaws. Of some fourteen (14) studies identified by one consultant as marginally relevant, seven (7) could be considered most valuable. Of those, four (4) presented evidence in support of lowered cholesterol and other favorable markers as a result of use of beans and/or chickpeas. An additional report commissioned for the same purpose (alternative consultant) reported similar, but not identical conclusions. In sum, the data are mixed, the number of studies not sufficiently large at this point in time to support a successful application.

On the question of pulses and their effects on diabetes and related markers, a range of studies are available to examine a range of outcomes.

There appears to be a growing body of literature establishing the ability of pulses to reduce postprandial glucose, with a large number of studies supporting this relation□ ship. Similarly, the linkage between pulse consumption and glycemic index is strong, i.e., use of pulses can significantly lower glycemic index when compared with controls (18 studies).

There is not a body of evidence to show a relationship between diabetes prevention and use of pulses. The strongest data to date suggests that use of pulses has favorable effects on postprandial numbers in both healthy and diabetic subjects.

Dr. Curran described design issues that have been identified by Pulse Canada as important to newly commissioned studies in both areas, and briefly discussed ongoing studies by that sponsor, the results of some of which may be available later this year.

Key Points? The number of studies in the area that are of pulses generally, and beans in particular, intended to un□ ravel the link between cardiovascular disease and their use, is small, and the outcomes of such studies somewhat inconsistent. The number of studies examining the effects of pulse consumption on postprandial blood glucose is large, the data far more consistent, and the outcomes suggestive of a possible favorable regulatory application for a structure□function claim. The utility of pulse consumption in preventing diabetes remains an area of little study.

Features of well□designed studies were described and discussed in the context of regulatory standards, and com□ pared with ongoing research sponsored by Pulse Canada.

SUMMARY

The Agenda for this Workshop included considerable time for discussion among the participants on issues at the intersection of health, beans, consumers, and regulatory policy. And, there was time also devoted to discussion of a funding strategy for any research to subsequently be funded in part or whole, by Northarvest.

Appendix C includes the report of the Workshop, as pre□ pared by conference organizer Dr. Jerry Combs, Director,

Grand Forks Human Nutrition Research Center. This section affords an overview of those findings not otherwise referenced in the presentation summaries found above.

REVIEW OF SCIENTIFIC DISCUSSION/OUTCOMES

The bulk of the afternoon session was structured by "give and take" among the participants surrounding the state of knowledge on the role of dry beans in affecting human health in three (3) areas, including: beans□cardiovascular, beans□weight management/diabetes/satiety, and beans□ cancer. The goal of the session was to summarize the knowledge of the participants on the state of the science in these relationships and assess informally the gaps in knowledge that might need to be addressed in order to satisfy regulatory requirements associated with a health claim or health□related statement in some form.

Table 1 in the report of the Workshop (see Appendix C) suggests that in the near□term, the most promising opportunity for research associated with an unqualified health claim, may be in the area of cholesterol□related studies. The favorable relationship between use of beans and lower cholesterol may be associated with the high fiber content, and/or nature of starches found in beans, or other factors.

Also, the participants noted the very clear relationship demonstrated in a large number of studies linking the control of blood glucose following meals including beans. This may afford the basis for acknowledgement of a struture-function claim, or, may require additional evidence. In either case, this evidence is very strong as□is, and should be considered carefully.

Evidence for the use of beans in the prevention of diabetes is not strong. Nor, is the quality of evidence (as of this date) adequate to understand the links among beans and various cancers, especially as regards any application for a health claim. The "distance to go" in both of these health sectors appears to be considerable, and may require several well□designed studies over years, to establish.

The role of bean consumption in weight management and the area of satiety continue to be of interest, although the evidence today is incomplete.

Considerable data exists on the qualities of beans (high in certain nutrients; low in "anti□nutrients") that may be useful in content for labels, or worthy of still further scientific investigation on their roles in general health.

Specific pathways or mechanisms of influence, were identified, and a working set of research priorities has been formulated/recommended to include generally cardiovascular health, weight management/obesity prevention, and colon health.

FUNDING NORTHAR VEST'S HUMAN RESEARCH STRATEGY

Mr. Veile1 (Communiqué, Inc.) provided an overview of the nature and outcomes of a co□funding strategy that his firm has managed on behalf of the US Soybean Board. In sum, the US Soybean Board "seeds" what it considers to be promising research, in an attempt to assist researchers in their applications for federal funds disbursed under NIH guidelines. According to Mr. Veile, the Board reviews/ establishes soy□health research priorities, solicits research abstracts, then "seeds" highest ranked abstracts upon sub□ mission of a full□blown NIH proposal. Approximately 1□in□ 10 NIH submissions (overall) receives funding, and the Board investment has been approximately $100,000 per year for some seven years. This has been associated with the receipt of roughly $12 million in NIH funds to targeted research projects, and has met with the satisfaction of the sponsor.

SELECT CONCLUSIONS FROM THE CONFERENCE

Many in the pulse industry, and many in the dry bean industry, have come to recognize the value now, and into the future, of product positioning which is based upon dimensions of human health. The Symposium held in Puerto Vallarta in May included speakers from around the world extolling the value of pulses generally and dry beans in particular as important dietary factors in human health. These conclusions applied to a variety of nationalities and arose under varying economic, social, and underlying health conditions. The industry has awakened to the possibility of using health claims and health information in marketing positioning strategies, and indeed, some are doing so now.

Industry representatives and health researchers are be□ ginning to organize platforms for research into the link□ ages among various attributes of dry beans and human health. Firms are coming to realize the importance of carrying out such research as a predicate to effective and ethical marketing communication, and health researchers require stable funding in order to carry□out their work. Dry beans have not received the health research attention that has been showered upon soy, and in terms of re□ search platform, are not yet well positioned to achieve even one, US□approved, unqualified health claim useful to marketing communication. The need to organize and prioritize efforts in the area of human research is under□ scored daily in the food□press, as claims have been achieved for a variety of commodities, some containing compounds similar to those found in dry beans. If dry beans are to succeed in growing demand as a category of foods, health positioning seems to be necessary both now, and in the long□term. Underlying consumer factors are strongly entrenched that will ensure demand for health□ based foodstuffs for generations to come.

Northarvest is nearing conclusion of its initial efforts to establish a human health□beans research agenda. The organization has 1) sought and obtained scientific input for identifying research priorities, 2) has identified a funding strategy which promises to utilize public research funds (thereby potentially dramatically increasing the impact of scarce resources), and 3) has taken steps to emplace a knowledgeable and experienced agent to manage the day□ to□day activities associated with preparing, soliciting, screening, and accounting for high quality research studies. This strategy, of course, requires the "long view" since studies of human health necessary to aid in marketing communication efforts require years to position, execute, report, and assemble in preparation for government re□ view.

Northarvest should continue its efforts to develop a human health research platform focused upon clearing FDA hurdles. It should also re□focus its efforts to develop marketing communication platforms based upon existing knowledge of bean□health linkages. These insights will provide fresh reasons for consumers to re□introduce beans into their diets, and should be expected to work synergistically with efforts being undertaken by one or more industry members (see e.g., Bush Brothers). The dry bean industry could benefit from these efforts since 1) consumers are not very knowledgeable about the existing healthy aspects of dry beans, 2) consumers are, at this moment, very receptive to health messaging, 3) considerable existing research has not been leveraged in a manner conducive to developing favorable consumer awareness and comprehension of bean benefits.

This twin strategy—conducting needed human health re□ search in order for the industry to maintain a competitive posture on the health dimension of market positioning, while also communicating known benefits of bean use— should be implemented as funds permit.

Appendix B

MDA Marketing Minute

Minnesota Department of Agriculture
Ag Marketing Division
Wednesday, October 17, 2007

Pay per click campaign has huge marketing potential

Early results of a new internet marketing campaign for the Minnesota Grown program have been dramatic! The Minnesota Grown program embarked on an exciting new "pay per click" (PPC) marketing campaign in September to bring consumers directly to the on-line Minnesota Grown Directory. Here's how the PPC campaign works: The Minnesota Grown Directory ad shows up on a list of "sponsored links" when someone searches for specific key words that have been selected. For example, one of the key words selected is "apples". If you are located in Minnesota (or in adjacent areas like Fargo, LaCrosse and Superior) and enter the word "apples" into the Google search engine, The Minnesota Grown ad will show up in the list of sponsored links. If you click on the ad, Minnesota Grown will be charged a fee and you'll be taken directly into the program's website. If you don't click on the ad, there is no cost.

Minnesota Grown program director Paul Hugunin said the overall PPC campaign in September resulted in more than 13,000 click-throughs to minnesotagrown.com. "The total cost was approximately $2,000 (roughly $0.16 per click). For producers listed in the Directory this represents a big boost in the already large number of potential customers seeing their Directory listing," said Hugunin. "What's even better is that we know these consumers are looking for locally grown and raised products because they were already searching for them on-line." On Saturday, September 22nd alone, the ads resulted in over 1,100 click-throughs.

An additional benefit for producers with a website is that consumers can go directly from their Minnesota Grown Directory ad to the producer's website. Hugunin said a similar PPC campaign is being launched on Yahoo and he's considering marketing on the MSN and Ask internet search engines.

A few interesting notes about September's PPC campaign:

- The Minnesota Grown apple ad was by far the most popular of the ads. It received more than 10,000 click-throughs from people searching for one of the 19 different keywords on the list related to apples.
- Over 32% of the people who entered "orchards" into a Google search clicked on the Minnesota Grown ad and were taken to the Minnesota Grown Directory.
- Nearly 1,500 people clicked on the Minnesota Grown winery ad during September.

- Over 850 people clicked on the "local food & fun" ad featuring hay rides, pumpkin patches, fall raspberries, crop mazes and more.
- The "local food" ad resulted in 250 clicks from people searching for farmers' markets, CSA farms, cheese, honey and other key words.